

The Future of Batteries: Hemp-Based Supercapacitors Outperform Lithium and Graphene at a Fraction of the Cost

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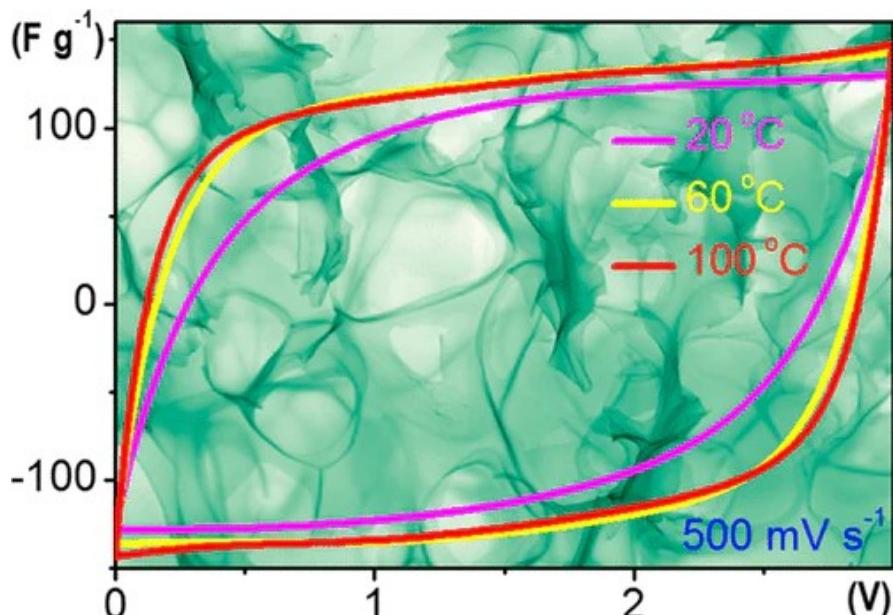


Robin Roy Krigslund-Hansen

[in](#) [✉](#)

About the author:

Robin Roy Krigslund-Hansen is known for his extensive knowledge and expertise in the fields of CBD and hemp production. With a career spanning over a decade in the cannabis industry, he has dedicated his life to understanding the intricacies of these plants and their potential benefits to human health and the environment. Over the years, Robin has worked tirelessly to promote the full legalization of hemp in Europe. His fascination with the plant's versatility and potential for sustainable production led him to pursue a career in the field.



The versatility of hemp seems to know no bounds. Since its legalization for growth in the United States, hemp has been utilized in the production of more sustainable clothing, construction materials, and medicine. Now, it appears that hemp may also revolutionize the world of batteries. Researchers have discovered that hemp batteries can potentially last eight times longer than lithium-based batteries and outperform graphene at a fraction of the cost.

The Hemp Battery Revolution

Most of the batteries used in automobiles today are made from lithium-ion, a material known for being expensive and increasingly scarce. In response to these

expensive and increasingly scarce. In response to these limitations, a team of American and Canadian researchers have developed a battery using hemp bast fiber - the inner bark of the plant that often ends up as waste in landfills.

The researchers transformed the woody hemp pulp into carbon nanosheets, which they used to build supercapacitors comparable or superior to graphene, the current industry gold standard. Graphene, a synthetic carbon material that is both lighter than foil and bulletproof, is unfortunately costly to produce.

Hemp Batteries: Affordable and Sustainable

The inventor of this innovative technology, David Mitlin, a chemical engineer, spoke to the [BBC](#) about his team's breakthrough: "People ask me: why hemp? I say, why not? We're making graphene-like materials for a thousandth of the price – and we're doing it with waste." Mitlin first published a description of the hemp battery in the [journal ACS Nano in 2014](#).

A recent demonstration by a [YouTuber](#) compared the performance of a hemp battery against a lithium-ion battery, and the results were astounding: the hemp battery was eight times more powerful. Tesla's new million-mile battery, made from lithium-iron phosphate, is designed to last twice as long as conventional lithium-ion batteries. However, even this advanced battery cannot compete with the power and renewability of hemp-based batteries.

Implications for the Future

The development of hemp batteries offers a more sustainable and affordable alternative to lithium-ion and graphene-based batteries. By replacing lithium batteries

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with hemp, electric cars and other gadgets can become significantly more eco-friendly. The use of a renewable resource like hemp to create powerful and cost-effective batteries has the potential to revolutionize the battery industry, making our world more energy-efficient and sustainable.

Conclusion

Hemp continues to prove its incredible versatility, and the development of hemp-based batteries is just another example of its potential to transform industries. As researchers continue to explore the full extent of hemp's capabilities, we can expect even more innovations that will make our world greener and more sustainable. With hemp batteries outperforming lithium and graphene at a fraction of the cost, the future of energy storage looks bright and environmentally friendly.

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